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ABSTRACT

Two studies were specifically designed to test the effect which leadership training and experience would have on the performance of relationship-motivated and task-motivated leaders. In the first study it was predicted that task-relevant training and experience would make the situation more favorable in the task-structure dimension. Subjects were 55 section chiefs in charge of gun crews in a field artilary group. The results completely supported the Contingency Model which holds that training improves the favorableness of the leadership situation. The second study was conducted to validate the findings of the first study. The subjects were 58 navy petty officers who supervised various maintenance shops of two naval aviation squadrons. The results again supported the Contingency Model and were highly similar to those obtained in the first study. These two studies help to explain the reason for the poor research results on leadership training and organizational effectiveness, since they support the Contingency Model's reconceptualization of leadership training and experience. (Several pages may be light.) (Author/BW)

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A CONTINGENCY MODEL APPROACH TO LEADERSHIP TRAINING[1]

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Abstract

A review of the leadership training research shows that neither training nor experience increases organizational effectiveness. These disappointing results can be explained by the Contingency Model. This theory postulates that task-motivated (low LPC) leaders perform best in very favorable and unfavorable situations while relationship-motivated (high LPC) leaders perform best in situations of intermediate favorableness. It has been generally assumed that leadership training makes a leader more effective. The Contingency Model, however, holds that we should view training as improving the favorableness of the leadership situation. Therefore, in very favorable and unfavorable situations, training and experience should improve the performance of low LPC leaders and decrease that of high LPC leaders while in the intermediate situations, training and experience should improve the performance of high LPC leaders. Two studies were specifically designed to test the effect which leadership training and experience would have on the performance of high and low LPC leaders.

[1]This paper was presented at the annual Western Psychological Association Convention in Portland, Oregon, on 26-29 of April, 1972.

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A CONTINGENCY MODEL APPROACH

TO

LEADERSHIP TRAINING

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The recent leadership literature has repeatedly shown that neither leadership experience nor leadership training seem to improve organizational effectiveness (see Campbell, et al., 1970; Fiedler, 1966, 1970; House, 1968; Schein & Bennis, 1965). These findings are surprising for a number of reasons. First, "common sense" tells us that people must surely learn something from their experience and training. Second, business executives and not a few psychologists and management experts point to the extensive use of training and the billions of dollars spent by business, industry, and government each year as implicit proof that executive development and leadership training must be worthwhile. Many writers in this field have, therefore, attempted to explain the apparent failure of leadership training on the basis of weak criteria, inadequate research design, or insufficiently intense training methods. It is difficult to see, however, how all studies reported to date should be so deficient in research sophistication.

A completely different explanation was recently advanced by one of the authors (Fiedler, 1971b). This explanation is based on the Contingency Model, a theory of leadership which postulates that a group's or organization's effectiveness is contingent upon two interacting factors. These are (a) the motivational pattern or leadership style, as measured by the Least Preferred Coworker (LPC) score, and (b) the favorableness of the leadership situation, i.e., the degree to which the situation itself provides the leader with power

and influence. The theory holds that the task-motivated (low LPC) leaders perform best in very favorable and in unfavorable situations, while the relationship-motivated (high LPC) leaders perform best in situations of intermediate favorableness (Fiedler, 1964, 1967, 1971a).

This formulation has a number of implications which are of relevance for our understanding of leadership training. First, it implies that both the task-motivated and the relationship-motivated leaders will be effective in some situations but not in others. Second, it suggests that we can change organizational performance either by training the leader to adopt a new motivational system each time he comes into a new leadership situation, or that we can change certain aspects of the situation in order to "match" it to the leader's motivational pattern (Fiedler, 1966). We have generally viewed leadership training as a means of changing the leader. We can also reconceptualize leadership training as a means of improving the situational favorableness. Seen in this light, it becomes understandable why previous attempts to show the effects of leadership training have been unsuccessful: situations in which relationship-motivated (high LPC) leaders will succeed as a result of training will be those in which task-motivated (low LPC) leaders will become less successful; and conversely, situations in which training will benefit low LPC leaders will degrade the performance of high LPC leaders.

The Contingency Model has been extensively described in previous publications (e.g., Fiedler, 1964, 1967, 1971a). The present paper will confine itself, therefore, to a brief review of the theory's aspects which are essential to the understanding of the present study.

The LPC score. The score is obtained by asking an individual to think of all those with whom he has ever worked and then to describe the one person with whom he found it most difficult to work on a common task. A high LPC score indicates that the individual is primarily motivated to accomplish assigned tasks.

Situational Favorableness is conceptually defined as the degree to which the situation provides the leader with power and influence. In the original development of the Contingency Model this dimension has been measured on the basis of three subdimensions. The first is the leader-member relations dimension. The assumption is that an accepted and trusted leader has more influence than one who is distrusted or rejected. Second is the task structure. A leader who knows the assigned goal and the exact method for reaching it will have more power and influence than one whose task is vague and nebulous and about which the members know as much as does the leader. The third subdimension is the position power of the leader since a leader who can reward and punish his members obviously can exert more influence than one whose power is very limited.

Group situations are categorized as being high or low on each of these three subdimensions. This leads to an eight-celled classification system. The eight cells or "octants" can then be scaled from most favorable (high leader-member relations, high task structure, and high position power) to least favorable (low leader-member relations, low task structure, and low position power). Figure 1 shows this classification system, as well as the predicted performance for high and for low LPC leaders in the various octants.

Insert Figure 1 about here

As the Contingency Model would lead us to expect, an increase in situational favorableness should benefit the high LPC leaders in certain conditions but be detrimental to low LPC leaders, while the opposite would be the case in other leadership situations.

If we now interpret leadership training as one means of improving situational favorableness, we would anticipate that this would increase the performance of low LPC leaders in the favorable as well as the unfavorable situations, but decrease the performance of high LPC leaders. Leadership training in intermediate situations would increase performance of high LPC leaders but decrease performance of low LPC leaders. Results obtained by McNamara (1968) in a study of Canadian elementary and high school principals could be interpreted in this manner, and a reanalysis of data obtained in previous studies (Fiedler, 1971b) has further supported this formulation.

Previous work has treated task structure as a given, that is, as something inherent in the situation, and assumed that all leaders have about the same degree of technical and job-related competency. It ignores the fact that a job, no matter how well structured for the experienced and competent supervisor, may be vague and unstructured for the inexperienced or untrained individual. For the purposes of the present study, the individual is seen as able to structure the task if he has received adequate training. This study, therefore, considers task structure as depending upon the individual's ability to deal with the task rather than as inherent in the nature of the task.

One further elaboration of the classification system is called for if we deal with leaders who are relatively untrained for their rather technical

jobs. It is quite clear that the leader with inadequate training and experience must rely on his group members for advice and guidance or for performing the job well without having to be shown how it is to be done. This presents no particular problem for the accepted and liked leader. However, the leader who is not accepted or who is disliked can expect no such assistance from his group members. In fact, while his formal position power may be high, this is a legal fiction for the untrained leader who may not even know what kind of direction to give to his group members. He must, therefore, relinquish some of his formal position power in order to obtain cooperation as well as assistance in performing the task. In other words, for the untrained, inexperienced leader with poor leader-member relations, the actual position power is, in effect, low. This contention is supported by Grusky's (1964) study which shows that the leader's perceived authority is very low for individuals who are relatively new on the job. This suggests that the group situation for the leader with low training and low experience has, in effect, low position power as well as low task structure. That is, such an individual in fact finds himself in a situation comparable to Octant VIII.

Two studies were here conducted as specific tests of the hypothesis that training will differentially affect the performance of high and low LPC leaders. The first study tested the hypothesis on new data obtained from section chiefs of an Army field artillery group. A validation study was conducted on petty officers in charge of naval aircraft maintenance shops.

The studies test the following specific hypotheses:

1. The leader's LPC score will correlate negatively with group performance in favorable situations regardless of training (in this case, in Octants I and III).

2. The trained leader's LPC score will correlate positively with group performance in intermediate situations (Octant V). The untrained leader's LPC score will correlate negatively with performance in relatively unfavorable situations (Octant VII). As will be seen, because the position power of leaders in this last situation turned out to be low, the groups actually fell into Octant VIII.

The Field Artillery Study

Subjects. The subjects of the first study were 55 non-commissioned officers of a Field Artillery Group stationed at Fort Lewis, Washington. The artillery men held positions as section chiefs in their respective units; that is, each was in charge of one gun crew with six crews normally assigned to a battery.

The field artillery men ranged in age from 19 to 48 years. They had from 1 to 22 years of experience, and from 0 to 180 months of experience as section chiefs or maintenance supervisors. The men were directed to participate in the study as part of a military research program. Most of them did so matter-of-factly, without any signs of anxiety or concern, expecially after being assured that their participation would not affect their careers in any way.

The men completed a series of questionnaires. The first asked for background information on level of education, previous leadership experience, as well as previous training. As the data showed, almost all of the training was technical in nature, lasting on the average for six weeks with a range from 0 to 36 weeks. The average educational level was 12 years of school with a range from 9 to 17 years.

Tests and Questionnaires

The Least Preferred Coworker (LPC) scale. Subjects were asked to think of all men with whom they had ever worked, and then to describe the one person with whom they could work least well. These descriptions were made on a standard 16-item, bi-polar adjective scale. A high LPC score is interpreted to indicate relationship-motivation, that is, a basic motivation to be related to others. A low LPC score indicates task-motivation, which manifests itself in concern for task accomplishment. This score is a key variable in the Contingency Model, and has been extensively described elsewhere (Fiedler, 1967, 1971a).

Group Atmosphere score (GA). This score is obtained by asking individuals to describe on a 10-item scale similar to the LPC scale the group with which they are now working. The score reflects the degree to which the leader feels that the group is loyal and supportive of him (McNamara, 1968). For purposes of this study, the cutting score of high versus low GA was based on Posthuma's (1970) finding for real-life groups which showed a median GA score of .65.

Situational Favorableness

Each section chief typically supervises six enlisted men. The task of the men, as well as the section chief, is spelled out in considerable detail, although the nature of the task involves numerous technical problems of varying complexity. In particular, the section chief is required to troubleshoot when necessary, and he must exercise considerable judgment in the supervision of his men and in his role of non-commissioned officer. While the task can be considered to be structured by the usual standards (e.g., Hunt, 1964), a man who is completely untrained and inexperienced

would be clearly incapable of supervising either the crew or the technical aspects of handling and maintaining the gun.

In the present study, there was almost perfect agreement among eight judges that the trained section chiefs would have very strong position power. Leader-member relations were assessed on the basis of the subject's group atmosphere score. Groups were then assigned to octants depending upon the leader-member relations and position power, with trained leaders considered to have a structured task and untrained leaders an unstructured task. The hypotheses of this study are, then, specific to Octants I, III, V, and VII (VIII in Study 2).

Performance Measures

The criterion of leadership performance consisted of three independent effectiveness ratings given by the section chief's commanding officer, executive officer, and the chief of firing battery. The scale consisted of seven items which were considered by the officers of the organizations to provide the best measures of performance. The intercorrelations of these items ranged from .66 to .95 and the average of the total scores given by the three raters correlated .86 with the global rankings given by superiors to each of the subjects. Since there were no significant differences in means and standard deviations between batteries on these ratings, no further statistical transformation or correction was necessary for the artillery subjects.

Naval Aviation Maintenance Shops

A validation study was conducted which utilized 58 petty officers who supervised naval aviation maintenance shops from two operational squadrons. The methodology of this second study was practically identical to the field

artillery study with the following exceptions:

1. The petty officers were in charge of 8 to 12 maintenance men.
2. The task of the petty officers, while highly structured, was considerably more complex from a technical point of view than in the field artillery study, and the maintenance men and their supervisors were correspondingly more highly trained.
3. The men ranged in age from 19 to 46 years and had from 6 months to 23 years of experience. Training ranged from 2 to 98 weeks.
4. Ratings of petty officers were obtained from squadron maintenance officers and warrant officers in charge of these shops. These ratings were based on nine subscales coupled with a ranking of the importance of each of the subscales. Since we found differences in mean ratings between the two squadrons which did not seem to reflect better overall performance by one squadron as compared to the other, the ratings were standardized to equalize means and standard deviations.

Results

Although the study of the navy aviation maintenance sections was conducted after completion of the field artillery study, the results for these two investigations are presented together.

Hypotheses 1 and 2: Training and Performance

The first hypothesis concerned groups in Octants I and III, that is, groups in which the leader-member relationship is good and the position power is strong. Task structure in this study is, of course, defined in terms of technical training. A technically trained individual should be able to structure the task better than one who is poorly trained. This

ability to structure the task should then lead to different levels of performance for high and for low LPC leaders.

Hypotheses 1 and 2 apply to favorable situations (Octants I and III). In both of these situations, the task-motivated leaders should perform more effectively than relationship-motivated leaders. Both hypotheses were supported (Table 1).

Insert Table 1 about here

In situations in which the leader-member relationship is moderately poor, the situation is intermediate in favorableness if the task is structured (i.e., the leader is trained) but unfavorable if the task is unstructured (i.e., the leader has little or no training). In the former (Octant V), the high LPC leaders should perform better, while in the latter, unfavorable situation (Octant VII), the low LPC leaders should perform better than high LPC leaders.

The most likely explanation for the divergent results in Octant VII appeared to be that the combination of poor leader-member relations and lack of leadership training made the leader's position power, in fact, quite weak. This possibility was quickly checked by means of a short questionnaire asking the section chiefs of the field artillery crews for their perception of their position power. As expected, section chiefs with poor leader-member relations, as well as relatively little leadership training, perceived their position power as significantly lower than did section chiefs in other subgroups. These particular groups were, therefore, assigned to Octant VIII in the navy maintenance study, and it was hypothesized that the correlation

between leader LPC and rated group performance would be in the negative direction. As can be seen from Table 1, this was, indeed, the case.

Previous studies based on the Contingency Model have, of course, ignored training of leaders. The important contribution of this factor can be seen by pooling groups with trained and untrained leaders, and considering all group situations to have structured tasks, consistent with previous practice.

The resulting correlations between LPC and performance for groups with good and with poor leader-member relations were -.55 ($N = 23$, $p < .01$) and -.15 ($N = 32$, n.s.) for the field artillery, and -.47 ($N = 28$, $p < .01$) and -.10 ($N = 27$, n.s.) for the navy supervisors. Thus, taking training into consideration substantially increases the level of prediction. The hypotheses of this study have been tested primarily by means of correlation coefficients. It is important to note, however, that the Contingency Model would predict that the high LPC leaders with training (Octant I) should perform less well than those without training (Octant III); while the low LPC leaders without training (Octant VIII) should perform better than those with training (Octant V). (The obverse, that leaders with training should perform better than those without training would, of course, be a trivial finding.) Figure 2 shows this to be the case for Octants V and VIII. Thus, training seemed to have been, in fact, detrimental for leaders in these situations. Similar results were obtained by Fiedler (1971b) in reanalysis of previously obtained data.

Insert Figure 2 about here

This study provides important support for the Contingency Model. It provides strong evidence that the theory leads to several hypotheses which are far from obvious. The finding that increased training is detrimental for certain types of leaders in given situations, as the Model would predict, also enables us to explain the previous findings that leadership training does not result in across-the-board improvement in organizational performance (Fiedler, 1970). In effect, previous leadership training has failed to produce the desired results because the positive and the negative effects cancelled each other out.

In a completely new departure, this study provides an important insight into the function of training as it pertains to the situation. Training, as we saw, materially affected the degree of structure in the task. However, two points must be made which limit the generality of our findings. First, we dealt with section chiefs of field artillery crews and maintenance supervisors of aircraft maintenance crews. The tasks of these men are highly structured, and it is possible to train a man to perform his leadership functions in a fairly routine and uniform manner. Whether training will have similar effects on performance in highly unstructured tasks needs to be determined later. Can we, for example, expect to train a man to perform well as the chairman of a committee, or the director of a research unit? These results, at least in structured tasks, seem to have some generality.

Last, but not least, the incorporation of training effects into the Contingency Model represents an important advance, not only in our understanding of this leadership theory, but also in our ability to view training in a new light by redefining these in terms of their effect on the favorableness of the leadership situation.

TABLE 1

Correlations between LPC Scores and Performance Ratings for Leaders with Relatively Extensive and Little Training

Sample	Octant			
	I	III	V	VII[1]
Fort Lewis, Wa. Field Artillery Section Chiefs	-.47* (N=12)	-.78** (N=11)	.75** (N=14)	-.66** (N=18)
Whidbey Island NAS Navy Maintenance Supervisors	-.49* (N=13)	-.42 (N=15)	.67* (N=12)	-.75** (N=15)
Leader-Member Relations	Good	Good	Poor	Poor
Position Power	Strong	Strong	Strong	Perceived Weak
Training	High	Low	High	Low

*$p < .05$

**$p < .005$

[1]Octant VII changed to Octant VIII after additional analysis of position power in first study.

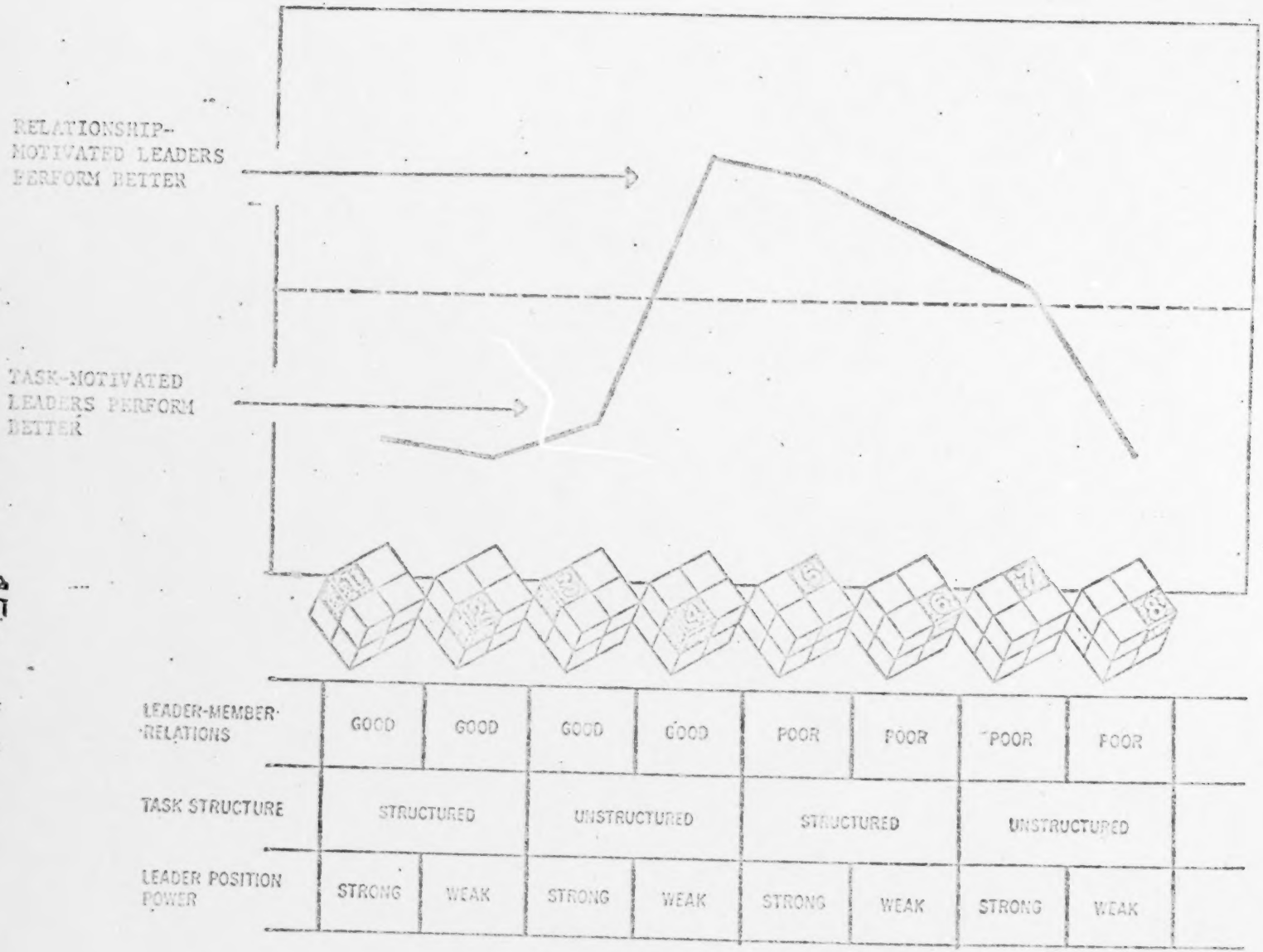

Figure 1

Schematic Representation of the Effect of Leadership Training On Performance as Predicted by the Contingency Model

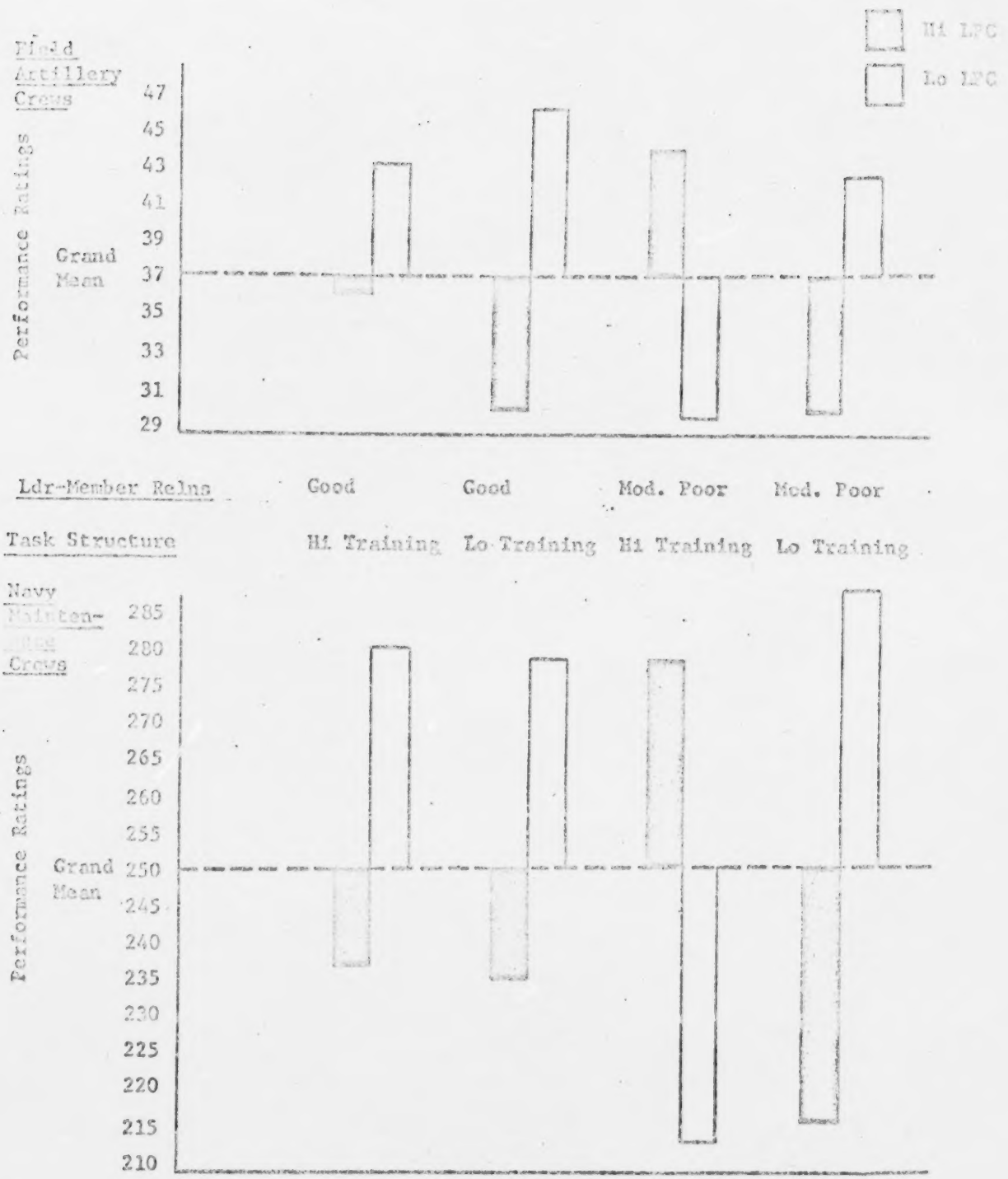

Figure 2

The Effect of LPC and Training on the Leadership Performance of Artillery Section Chiefs and Navy Aircraft Maintenance Supervisors